

Sender: fmills@caesar.jpl.nasa.gov
Date: Fri, 09 Mar 2001 17:10:55 -0800
From: Frank Mills <franklin.p.mills@jpl.nasa.gov>
Reply-To: franklin.p.mills@jpl.nasa.gov
X-Mailer: Mozilla 4.7 [en] (X11; U; SunOS 5.6 sun4d)
X-Accept-Language: en
To: marysue.obrien@jpl.nasa.gov
Subject: abstract for clearance for EOS Aqua meeting

I found a text version of the abstract. Sorry for omitting it from the package. Thanks.
-Frank Mills

Title: OH Column Abundance Measurements Over JPL's Table Mountain Facility

Abstract:

The column abundance of OH over the Jet Propulsion Laboratory's Table Mountain Facility (TMF) has been measured regularly since Jul 1997 using the Fourier-Transform Ultraviolet Spectrometer. 4574 measurements have been made at solar zenith angles of 11 - 80 degrees since Jul 1997. Of these, 1600 morning measurements and 1535 afternoon measurements were made between Nov 1998 and Dec 2000 at solar zenith angles ≤ 65 degrees and have fractional spectral fit uncertainties of $\leq 37\%$, with a median uncertainty of 14%.

Empirical linear fits for OH column as a function of solar zenith angle have been derived. For almost all months in which statistically significant fits could be derived, the afternoon OH column is larger than the morning OH column at the same solar zenith angle. After removing the first-order dependence of OH column on solar zenith angle, daily average variations in OH column over TMF were calculated. The variations observed are statistically significant, are highly correlated between morning and afternoon, and are highly correlated at all solar zenith angles ≤ 60 degrees. The observed daily average variations in OH column are most strongly correlated with variations in O3 and H2O abundances near 35-40 km altitude as observed near TMF by HALOE (version 19). This correlation agrees with sensitivity studies using a photochemical model with standard JPL1997 chemistry. The slope of the linear fit for OH column as a function of solar zenith angle is steepest in winter and shallowest in summer. The increased sensitivity of OH column to changes in solar zenith angle may result from the observed smaller O3 column above 35 km altitude in winter over TMF.

The research described in this paper was performed at the Jet Propulsion Laboratory, California Institute of Technology, and jointly sponsored by Caltech and the National Aeronautics and Space Administration Upper Atmosphere Research Program.

--

The opinions expressed herein are mine and do not necessarily represent those of JPL, NASA, or Caltech.